

IN THE SPECIFICATION:

Column 1, replace lines 36 - 54 with the following paragraph:

For example, in regard to the above problem (1), there have been proposed a method for filling up the cabinet with a sound absorbing material; a method for using a perforated sound absorbing board (Japanese [U.M.] Examined Utility Model Application Publication [JITSUKOSHO] No. 49-27241); a method for using a perforated sound absorbing board together with a sound absorbing material (Japanese [U. M.] Unexamined Utility Model Application Publication [JITSUKAISHO] No. 54-3930); a method for setting a sound reflecting board (Japanese [U. M.] Examined Utility Model Application Publication [JITSUKOSHO] No. 57-49492); a method for using a honeycomb core together with a sound absorbing material (Japanese Examined Patent Application Publication [TOKUKOSHO] No. 58-45236); and a method for providing a sound absorbing cabinet inside the cabinet (Japanese Examined Patent Application Publication [TOKUKOSHO] No. 61-61597). For the problem (2), it has been proposed that walls of a cabinet are thickened. For the problem (3), a method for covering an opening of a frame of a speaker unit with a sound absorbing material has been known.

Column 2, replace lines 20 - 23 with the following paragraph:

(2) In case the wall of the speaker cabinet is thickened, since the standing waves is are not suppressed, the problem of the diaphragm of the speaker unit can not be solved.

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Replace Column 2, line 61 through Column 3, line 41 with the following:

BRIEF DESCRIPTION OF THE DRAWINGS

The nature, principle, and utility of the invention will become more apparent from the following detailed description when read in conjunction with the accompanying drawings in which like parts are designated by identical reference numbers, in which:

FIG. 1 is a central cross section of a first embodiment of a cylindrical type speaker system according to the present [invention.] invention;

FIG. 2 is a graph illustrating a characteristic of transmission energy to frequency of the first [embodiment.] embodiment;

FIG. 3(A) is a perspective view of a second embodiment according to the present [invention and] invention;

FIG. 3(B) is a graph showing a frequency characteristic of the second [embodiment.] embodiment;

FIG. 4(A) is a perspective view of a third embodiment suitable for a box type speaker system according to the present [invention,] invention;

FIG. 4(B) is a perspective view of a paper box [assembly, and] assembly;

FIG. 4(C) is a graph showing a frequency characteristic of the third [embodiment.] embodiment;

FIG. 5(A) is a perspective view of a fourth embodiment according to the present invention;

FIG. 5(B) is a section view showing an example of a part of a speaker [unit.] unit;

FIG. 6(A) is a perspective view of a fifth embodiment according to the present [invention,] invention;

FIGS. 6(B) and 6(C) are perspective views of paper [boxes, and] boxes;

FIG. 6(D) is a graph showing a frequency characteristic of the fifth [embodiment.]
embodiment;

FIG. 7(A) is a perspective view of a sixth embodiment according to the present
[invention,] invention;

FIG. 7(B) is a graph showing a frequency characteristic of the sixth
[embodiment.] embodiment;

FIG. 8(A) is a perspective view of a seventh embodiment according to the present
[invention,] invention;

FIG. 8(B) is a perspective view of a square [tube,] tube;

FIG. 8(C) is perspective view of a paper [box, and] box;

FIG. 8(D) is a graph showing a frequency characteristic of the seventh
[embodiment.] embodiment;

FIG. 9(A) is a perspective view of [a of a] an eighth embodiment according to the
present [invention,] invention;

FIGS. 9(B) and 9(C) are perspective views of closed [boxes,] boxes; and

FIG. 9(D) is a sectional view for showing an assembly system of a part of
cabinets.

Replace Column 3, line 52 through Column 4, line 19 with the following
paragraph:

The speaker system of a first embodiment is a tallboy type, non-directional sound
radiation speaker system including a speaker cabinet (hereinafter called "cabinet") 1

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formed into a longitudinal shape. The cabinet 1 comprises a front baffle 2 and a speaker unit 3 fitted upwardly, at a top of the cabinet. The cabinet 1 comprises side walls 4 formed of a big paper tube of 25 cm in inside diameter, [1 m in length, (L) and 5 cm] 1 m in length (L), and 0.5 cm in thickness, used as a building material. The side walls 4 are mounted on a thick board 5, and the front baffle 2 made of a plywood 1.1 cm in thickness is mounted on the paper tubes. A sound resonance suppressing apparatus type 1 corresponding to the cabinet 1 comprises a plurality of cylindrical tubes 6a, 6b, 6c i.e. partition wall P, to form spaces S therein. The cylindrical tubes are all closed at both ends, and are made of a double wall corrugated cardboard of 0.4 cm in thickness and 0.07 g/cm² in density per area. The cylindrical tube 6a is 23 cm in outside diameter and 88 cm [in length l] in length (l) and has two cylindrical tubes 6b (18 cm in outside diameter, 12 cm in length, respectively), therein. The respective cylindrical tubes 6b have two cylindrical tubes 6c (12 cm in outside diameter, 19 cm in length) therein. Accordingly, four cylindrical tubes 6c are disposed in the cylindrical tube 6a in total. An axis of the big paper tube need not accord with axes of respective cylindrical tubes. A transmission energy frequency characteristic of the speaker system of the first embodiment is shown by a curved line in FIG. 2. A dotted line shows a frequency characteristic of the speaker system formed by eliminating the sound resonance suppressing apparatus type 1 from the first embodiment. The frequency characteristics were measured with a microphone disposed at a distance of 10 cm from an edge surface of the speaker unit 3 on the axis, by scanning in sine waves. It is apparent from the graph that a distortion of the frequency response is improved. Clearness of middle and bass sounds is increased, and a sound expansion increases.

Replace Column 5, line 17 - line 22 with the following paragraph:

The partition wall 9a may have a circular shape, a semicircular shape, or a doughnut shape to obtain good effect. The partition wall 9a may be disposed between the partition wall 9b and the side wall 8 in a longitudinal direction. Also, it is preferable that edge portions of the partition wall 9a contact [4(A)] the partition wall 9b in the longitudinal direction.

Replace Column 5, lines 50 - 55 with the following paragraph:

A cabinet 10 is a closed-type cabinet made of a plywood or particle board of 2 cm in thickness, and having an inside height of [75 cm] 75 cm, a width of 50 cm and a depth of 25 cm. A speaker unit (not shown) is a full range speaker having an aperture of 38 cm in diameter and attached to an opening 12 of a front baffle 11.

Replace Column 6, lines 18 - 35 with the following paragraph:

A sound resonance suppressing apparatus 4 type used in the fourth embodiment is formed of angle type corrugated cardboards 19a, 19b, 19c and 19d. The angle type corrugated cardboards are formed of a double wall corrugated cardboard of a thickness of 0.4 cm and a width of 25.2 cm so that the tops of the angle portions i.e. height from a bottom portion are 7 cm, 11 cm, 6 cm and [3 cm] 3 cm. [are the] The angle cardboard are fitted in the peripheral portions of the cabinet between the front baffle 11 and the back baffle 15. For the angle corrugated cardboard 19a, four corrugated cardboards of 25.2 cm

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×24 cm were used; for the angle corrugated cardboard 19b, four corrugated cardboards of 25.2 cm×18 cm were used; for angle corrugated cardboard 19c, two corrugated cardboards of 25.2 cm×26 cm were used; and for angle corrugated cardboard 19d, two corrugated cardboards of 25.2 cm×25.3 cm were used. In the fourth embodiment, the approximately same effect as that of the third embodiment was obtained.

Replaced Column 6, lines 40 -50 with the following paragraph:

Also, in case a speaker unit having a weight heavier than 1 kg is used in the fourth embodiment, if the speaker unit is suspended by a chain so that a frame abuts against a front baffle, a music, such as jazz, having impact sounds [cane] is [improved .] improved. In this case, the frame and the baffle may be fixed together by a bolt to prevent damages caused when the speaker system is moved. Or, the frame may be provided with boards for preventing the speaker unit from being slipped on front, back and side portions of peripheral edge thereof. FIG. 5(B) shows an example of the above structure.

Replace Column 7, lines 4 - 17 with the following paragraph:

FIG. 6(D) is a graph showing a frequency characteristic of sounds at the back side. It is apparent from the graph that the standing waves are reduced. Especially, in the fifth embodiment, reduction of the standing waves in the vicinity of 650 Hz is due to the paper box 26 shown in the drawing. Clearness of middle and bass sounds is improved. Clearness of middle and bass sounds is increased. Incidentally, although the twenty-nine paper boxes 25 were used in the embodiment, another fourteen paper boxes may be added to obtain good effect. The additional fourteen paper boxes are stacked on the

bottom board so that [forty three] forty-three paper boxes in total are used. A bass sound region reproduction limit and reproduction levels in middle and bass sound regions are not greatly changed.

Replace Column 7, lines 52 - 67 through Column 8, lines 1 - 3 with the following paragraph:

A sound resonance suppressing apparatus 7 type of the seventh embodiment is formed of ten square tubes 28 made of a cardboard and having two inner partitions between closed both ends as shown in FIG. 8(B), and two closed-type corrugated cardboard box 29 as shown in FIG. 8(C). Two sets of the five square tubes 28 are provided uprightly near both side walls, respectively. The two closed-type corrugated cardboard boxes are fixed side by side to the back baffle at a position opposite to the speaker unit. The square tube 28 is made of a cardboard of 0.06 cm in thickness, and composed of a closed box of 7 cm×7 cm×[20 cm] 20 cm, a box of 7 cm×7 cm×24 cm having an open top end which is disposed below the closed box and fixed by an adhesive tape, and another box of 7 cm×7 cm×24 cm having an open top end which is disposed below the box having an open top end and fixed by an adhesive tape to make a square tube of 7 cm×7 cm×68 cm. The two closed corrugated cardboard boxes are made of a double wall corrugated cardboard of 0.4 cm in thickness and have a dimension of 5 cm×15 cm×22 cm.

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Replace Column 8, lines 59 - 62 with the following paragraph:

Even in the large speaker system [of,] of this embodiment, reproduced sounds having no distortion, no discomfort, high clearness and improved expansion can be obtained so that TV sounds do not disturb person's ears.

Replace Column 9, lines 12 - 43 with the following paragraph:

Assuming that (L) denotes a maximum inner length among the width, depth, and height of the cabinet, the partition wall, as shown by the embodiments in FIGS. 6, 7 and 8, has to be semi-transmissive for at least sounds of wavelengths near the dimension (L) in a longitudinal direction of the cabinet, for example, a wavelength of (L) or a wavelength of twice of (L) . That is, the partition wall has to be semi-transmissive for sounds of lower frequencies in the standing waves. It is obvious that a full-transmissive partition wall is not effective. The full-reflective partition wall produces standing waves of different wavelengths in case the partition wall has no diffusion effect, which causes a problem that reduces an effective capacity of the cabinet. Assuming that (l) denotes a maximum dimension among width, depth, and height of the space enclosed by the partition walls, the dimension (l) may be preferably made shorter than (L) . A closed end of the space may be preferably formed in between one-half and four-fifths of a distance from one longitudinal end of the cabinet to the other. Also, it is desirable that a ratio of cross-sections of the space and the cabinet is larger than one to five, in the cross-sections crossing the longitudinal direction of the cabinet and located between one-half and four-fifths of the distance from the one end of the longitudinal direction to the other. A total capacity of a space having no sound source of resonant sounds in the above-mentioned

space is preferably one-tenth to four-fifths of a capacity of the cabinet. A total area of opening areas of the space surrounded by the partition walls is less than one-tenth of a total surface area of the partition walls. The partition walls forming the space preferably include a partition wall for dividing the longitudinal direction of the cabinet and a partition wall for dividing a crosswise direction of the cabinet.

Replace Column 9, lines 64 - 67 through Column 10, lines 1 - 17 with the following paragraph:

Further, in the eighth embodiment shown in FIG. 9, the cabinet may have a corrugated cardboard stacked to the inside thereof and may be cut into several cabinets. The separated cabinets may be stacked to form a cabinet. This structure can suppress unnecessary resonance of the cabinet without making the cabinet heavy. Further, the acoustic isolation [wall] walls of plywood or the like may have a corrugated cardboard layer therein. This structure can decrease a coefficient of reflection of the sound wave, so that the standing wave can be attenuated faster. Incidentally, the corrugated cardboard layer integrated with the wooden plate forming the cabinet may be replaced by a laminated composite corrugated cardboard layer to be further thickened. Both the wooden plate and the corrugated cardboard layer may be replaced by a similar structure of resin. Also, to make easy replacement of the speaker unit, the speaker unit hung on the middle cabinet 32 by a chain and the front baffle may be constructed so that they can be removed as a unit. Further, the top and the bottom plates of the cabinet may have a box similar to the closed box 38 formed of a double-wall corrugated cardboard adhered to insides thereof.

In Column 10, between lines 17 and 19 insert the following paragraph:

The invention is not limited to the above embodiments and various modifications may be made without departing from the spirit and scope of the invention. Any improvement may be made in part or all of the components.

Replace the Abstract on the front page of the patent with the following paragraph:

A speaker system suppresses standing waves generated in the system and reproduces clear and dynamic bass sound. The system includes a cabinet formed of acoustic isolation walls, and at least one partition wall situated inside the cabinet to form a space by surrounding the space. The partition wall suppresses the standing waves generated inside the cabinet and is formed of a material having high internal loss. [The space has a total capacity more than one tenth of a capacity of the cabinet, wherein a closed end of the partition wall is located between one-half and four-fifths of a distance from one end to the other end, and an opening area of the same partition wall is located at a side opposite to the closed end in a longitudinal direction of the cabinet. The opening area is located between four-fifths and five fifths of a distance from one end to the other end.] The material has a density per volume greater than 0.1 g/cm^3 , a density per area from 0.01 g/cm^2 to 0.21 g/cm^2 and a characteristic of semi-transmission for the standing waves. The partition wall has a closed end portion. The closed end portion is formed of at least one of the partition wall and the acoustic isolation walls. The space is a substantially closed space.

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